

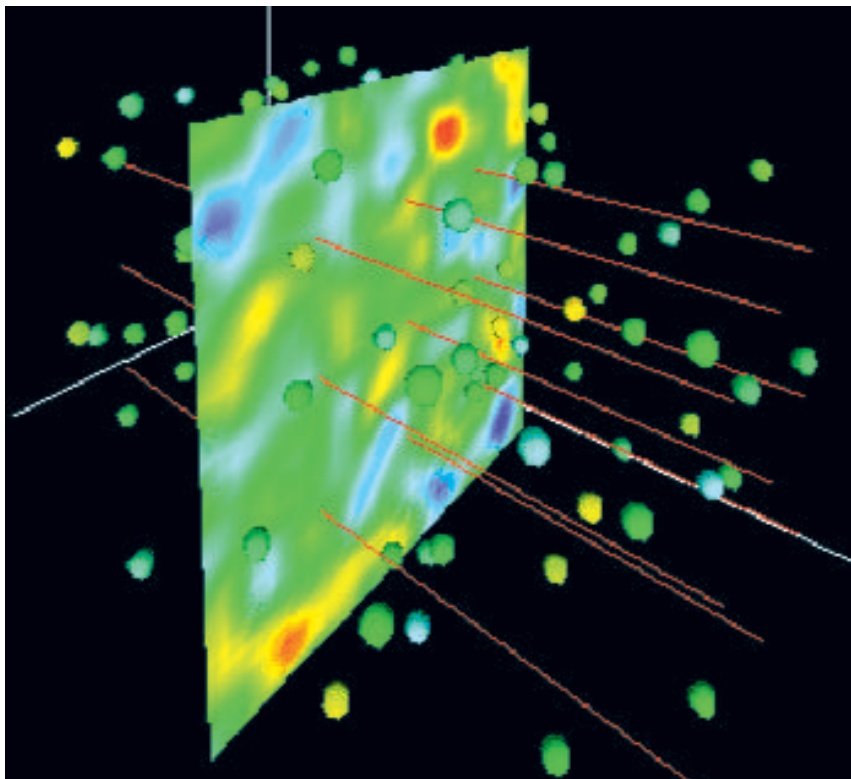
# BITS

## computing & communications news

November 1997

COMPUTING, INFORMATION, AND COMMUNICATIONS (CIC) DIVISION • LOS ALAMOS NATIONAL LABORATORY

*This parallel gyrokinetic particle simulation of plasma turbulence was produced with the Parallel Object-Oriented Methods and Applications (POOMA) framework. POOMA is a library of C++ classes—such as field and particle classes—designed for the applications' numerical methods. This construction enables efficient implementations in the lower levels of the framework while preserving an interface germane to the application problem domain at the highest level. This work has been supported primarily by the Department of Energy, Office of Scientific Computing. Results were obtained by utilizing resources at the Advanced Computing Laboratory in Los Alamos, the National Energy Research Supercomputer Center, and the Maui High-Performance Computer Center. See the article on page 1 for more information.*



### Inside this issue

#### Feature Articles

Parallel Object-Oriented Methods and Applications (POOMA)	1
Dial-Up Modem Upgrade	2
New CIC Recharge System Available on the Web	3
High-Performance Storage System	4

#### WWW at LANL

Making the Web Accessible Part 1: Overview and Graphics	6
Research Library's WWW Online Catalog Improved	10
Web Sites on Datamining	10

#### Microcomputing News

CIC-6 Desktop Consulting Statistics	11
-------------------------------------	----

#### In the Classroom

Research Library Training	13
Labwide Systems Training	14
Advanced Technical Computer Training	16

Index	23
-------	----

## Customer Service Center . . . . .(505) 665-4444 or cichelp@lanl.gov

Because of the wide variety of CIC computing services, numerous facilities are available to address your questions. If you are uncertain whom to call, you can always call the Customer Service Center (CSC). CSC consultants are trained to either answer your question or locate someone who can. To reach the appropriate consultant, dial 665-4444 and make your selection from the following choices:

Option 1: New user topics including e-mail, passwords, registration, and World Wide Web.

Option 2: Labwide Systems such as Travel, Time and Effort, and Purchase Cards.

Option 3: Scientific computing, storage systems, and networking.

Option 4: Classroom instruction and training.

Option 5: Desktop Consulting for PC and Macintosh software and network configurations.

### Consulting Via E-Mail

Customer Service Center.....cichelp@lanl.gov

Scientific and engineering computing.....consult@lanl.gov

Administrative and business computing.....labwide@lanl.gov

Passwords and registration.....validate@lanl.gov

Macintosh computing.....Mac-help@lanl.gov

PC computing.....PC-help@lanl.gov

UNIX computing.....UNIX-help@lanl.gov

### Other Useful Numbers

Advanced Computing Laboratory.....665-4530

Central Computing Facility.....667-4584

Network Operations Center.....noc@lanl.gov or 667-7423

Telephone Services Center.....667-3400

# Parallel Object-Oriented Methods and Applications (POOMA)

Scientific application codes such as those that will run on LANL's Origin2000 supercomputers are extremely large, complex computer programs that previously had to be painstakingly rewritten whenever hardware or software changed significantly. The POOMA framework that we developed is a software infrastructure designed to simplify the development of scientific application codes on parallel computer architectures.

Application codes written with POOMA are capable of running on serial, distributed, or parallel computer architectures with no changes to the code. Application developers express the fundamental scientific content and numerical methods of their problems using high-level language constructs similar to simple mathematical notation; they need not be familiar with the details of C++ object-oriented programming.

This framework is not only easy to use but also extremely agile and portable across rapidly evolving high-performance computing architectures. It can be used not only on parallel supercomputers, such as ASCI Blue Mountain, but also on common scientific workstations.

We are currently using the POOMA framework in several ASCI and Energy Research applications, including

- Multimaterial, 3-D hydrodynamics;
- 3-D turbulence simulations of tokamak fusion plasmas;
- Monte Carlo techniques; and
- Global ocean modeling.

We are also collaborating with researchers at government and academic research sites to develop new applications.

The POOMA Web Page shown below can be accessed at

<http://www.acl.lanl.gov/PoomaFramework>

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Advanced Computing Laboratory (ACL)



# POOMA

## Parallel Object-Oriented Methods and Applications

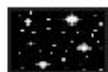
*A framework for scientific computing applications on parallel computers*



[POOMA Overview](#)



[Documentation, Papers, and Presentations](#)



[The POOMA Team](#)



[Related Information](#)



[POOMA Conferences](#)



[Reports Bugs](#)



[Pooma Licensing](#)



[Framework Version Summaries](#)



[POOMA Profiling](#)

## Dial-Up Modem Upgrade

The Network Engineering Group (CIC-5) has purchased a U. S. Robotics 56 kbps (bits per second) dial-up system that will eventually replace the Laboratory's existing Microcom dial-up modem system. This new system will improve performance and reliability for Laboratory dial-up users. The system's technology incorporates digital high-speed connections with network management capability to reduce user problems. The new system complements ISDN (integrated services digital network) immediately, and it will complement RADSL (Rate Adaptive Digital Subscriber Line) when that service becomes available.

The U. S. Robotics remote access server (RAS) was selected after an extensive evaluation process and user input. This RAS supports the 56K x2 technology, which is one of the two competing versions of 56 kbps. The other version is the K56flex technology, which is supported by other manufacturers. The overall industry standard has not been established and may not be until the middle of next year. The U. S. Robotics system was chosen over other vendors tested because of its performance, ease of maintenance and manageability, and user input. The great majority of user responses to Request for Help "RFH-7861: Terminal Internet Gateway (TIG) Modem Upgrade" favored the x2 technology that only U. S. Robotics supports.

Another advantage to the 56 kbps technology is that it replaces existing analog lines between the central telephone office switch (5ESS) and the integrated computing network (ICN) with digital lines. Digital technology is immune to noise and provides a more reliable connection to the user.

Problems can still exist on the user's phone line. Do not take the 56 kbps speed at face value because 56K modems operate asymmetrically; data flows at different speeds in the two directions. The RAS can ship data at speeds approaching 56 kbps but the maximum user modem speed is 33.6 kbps. Also, the FCC limits the top speed of the modems to 53.3 kbps. In other words, full 56 kbps operation is prohibited.

Our testing has shown that 56K modems are sensitive to noise. This makes it tough to achieve modem connect speeds close to 56 kbps. As seen in the test lab, the connect speeds on all modems tested were less and sometimes considerably less when we introduced line impairments. Users can deter-

mine whether their existing home phone line is 56K capable by using any V.34 modem and performing the line test provided by 3Com who just bought U. S. Robotics. (Go to <http://x2.usr.com/connectnow/linetest.html> and follow the instructions.)

Existing non-56K user modems can be used with the U. S. Robotics RAS because it supports all other modem standards except for the K56flex. Only modems that support x2 can operate above 33.6 kbps on good telephone lines. Other 56 kbps modems are downward compatible with V.34+ (33.6 kbps line speed) as well as V.32 (14.4 kbps) standards. Customers should see better performance even if they continue to use their existing non-56 kbps modems.

The disadvantage of the U. S. Robotics RAS is that the dial-up log in process does not provide a command line input (i.e., the "TIG>" prompt). It will only accept a direct PPP session. It is not possible to telnet from a command line prompt. This implies that users who employ scripts to log in would have to change their scripts. Users that telnet from the "TIG>" prompt (vs. telnet as part of PPP or SLIP) would have to change their mode of operation and possibly install new software. For this reason, we will slowly phase out the Microcom modems to give users plenty of time to migrate over to the new system. The user response from the Request for Help "RFH-7861: Terminal Internet Gateway (TIG) Modem Upgrade" indicated that this migration would not be a significant problem.

The existing Microcom system provides 120 channels of V.34+ modems that operate at a maximum line speed of 33.6 kbps (115.2 kbps with optimum data compression). These modems are behind the general lead phone numbers 667-9020 (local) and 1-800-443-1461 (long distance). The U. S. Robotics RAS will provide 48 channels of 56K x2 modems with the general lead phone numbers 665-4114 (local) and a 1-800-xxx-xxxx (number not assigned yet).

If you have any questions or are unclear about your scripts, talk to your local system administrator or call the Network Operations Center at 665-1648 or 667-7423.

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## New CIC Recharge System Available on the Web

On October 1, 1997, CIC Division began using a new Labwide Recharge System to process recharge for its major product lines:

- Worker Machines (Crays, Cluster, Thinking Machines)
- Storage (CFS, NFS, ADSM)
- Network (Infrastructure, E-mail, Office Automation, Dial-up, Smartcards, ICN passwords)
- PAGES (Print and Graphics Express Station)
- Telecommunications (phones, pagers, cell phones, channels, etc.)

The new recharge system collects detailed usage data for each product line daily and stores that data in a central repository. Then the data is validated, charges are created for the financial system, and reports with usage and recharge information are made available via Data Warehouse.

On November 14, 1997, CIC Division will release a Web interface to enter and validate charge codes for the new recharge system. Under the old CIC accounting system, each product line had its own method for processing the old format of 8 character charge codes. The recharge Web system will eliminate inconsistencies which often lead to confusion about how each product line processes charge codes. Users will now use the recharge Web page ([recharge.lanl.gov](http://recharge.lanl.gov)) to enter the new format of 20 character charge codes for all product lines. The new system will provide recharge that is more timely, accurate, and efficient. It will provide Labwide customers with a convenient way to enter and update charge codes, and provide access to reports detailing usage and charges.

### How It Works

Labwide customers, business team leaders, or group managers will log into the recharge system and enter the appropriate charge codes for the services they will be using. If authorized, they may also enter charge codes for other customers. When updates to charge codes are submitted on the Web page, charge codes will be verified immediately against the financial system. If the recharge system approves the charge code, a default charge code for the particular service and customer is stored in the system. When the usage data for each product line is processed, the customer's default charge code for the service will be used. However, if the charge code is not valid or becomes invalid during the year, the customer's account for the particular service will be disabled. When accounts are disabled, an e-mail message is sent to the

customer detailing why it happened and how to correct the situation.

Under the new system, Business Team Leaders can specify an allocated amount of funds for an account and a person to contact when the funds are almost spent. When the allocated funds are depleted, all customers using the account will be notified via e-mail, and the product line will disable access for those customers. Charge codes can also become invalid when BUS division closes the code for some reason. Some possible solutions for correcting this situation include changing the charge code you are using for the service, or having your Business Team Leader put more allocations into the depleted charge code. Once you have obtained a valid charge code and the recharge system has been updated, access to product lines can be reestablished on an hourly basis throughout the day.

The new system allows customers to specify more than one charge code for a service with either a percentage split or a project id attached. With percentage split, all charges for usage of the service can be divided according to the percentages entered for each charge code so long as they add up to 100 percent. With project id charges, the product line includes the project identifier in the usage data so that the charge code matching the project id is used when a charge is created. This is for customers who use the service for more than one project and want to divide the cost accordingly. If a percent split or project id is not specified, then only one charge code per service can be specified, and all usage for the service is charged to that charge code. Step-by-step instructions for entering and updating charge codes and project identifiers for both the recharge system and the individual product lines will be available November 14, 1997, at <http://recharge.lanl.gov>.

### How to Get It

The new recharge system will be available via the LANL Web on November 14, 1997. An ICN password or Smartcard and Netscape (3.0 or better) or Internet Explorer (3.0 or better) are required to access the recharge system. From the LANL home page, go to Information by Subject/Recharge, or enter the following URL: <http://www.recharge.lanl.gov>.

### Recharge Reports

Usage statistics for each product line are available as reports via the Data Warehouse system, which is available on the Web and through Labwide applications. Most group offices already have Labwide applications installed and use the client-server version of Data Warehouse. To use the client-server version, you will need a Macintosh or Windows PC

and Labwide applications software (available for downloading on ESD). The Web version of Data Warehouse is located at <http://www.datawarehouse.lanl.gov>.

#### What Happens on November 14?

All charge code entries and updates will be processed through the new recharge system. Any existing charge codes will be loaded into the new system. November will be a good time for you to review your charge codes in the recharge system on the Web for accuracy.

The production supercomputing machines and their client software will not convert to the new Recharge system until the access control system is turned off, which is projected to

happen on December 1, 1997. Supercomputer users should continue to set charge codes using the old format until that time.

#### More Information

Training for the new recharge system is available through the CIC-6 Training team (665-7996). For customer support, call the CIC-6 Labwide Consulting team at 665-4444, option 2.

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## High-Performance Storage System (Winner of a 1997 R&D Award)

Imagine having to store the data of a colossal library nearly a million times larger than the Library of Congress. Now imagine having to check out and check in the books in that library at speeds approaching hundreds of books each second! The magnitude of such a feat is comparable to the impending demands for high-performance storage systems.

In seven short years, advanced computing systems (such as the follow-on to our ASCI Blue Mountain computer) are expected to perform trillions of operations per second (teraflops). These machines will require systems that can store an exabyte (a quintillion bytes) of data, which is 10,000 times greater than the storage capacity of today's systems.

Recognizing the need to develop vastly improved storage systems and the fact that no single organization can address all the technical problems, in 1993 we joined a partnership to develop a High-Performance Storage System (HPSS). Computer scientists from several other DOE national laboratories (Oak Ridge, Lawrence Livermore, and Sandia), IBM Worldwide Government Industry, NASA Langley Research Center, and Cornell University's Office of Information Technology joined with us to tackle HPSS.

HPSS is system software designed to manage the vast amount of data produced and used by highly parallel computers as well as traditional supercomputers and clusters of workstations. The primary technical objective of HPSS is to move those large amounts of data between computers and storage libraries at speeds of hundreds of megabytes per second. HPSS accomplishes this task using commonly available net-

work and storage technologies and many different vendor devices. It is highly scalable in capacity and performance so that the storage system can grow incrementally as needs increase.

The basic infrastructure of HPSS is the distributed computing environment because of its wide adoption and nearly universal acceptance by the computer industry. But the network itself can use any technology supported by TCP/IP or IPI-3 protocols. Users can access HPSS files through any industry standard FTP or NFS interface, which means any computer platforms that support these protocols can access HPSS.

HPSS is designed to use network-connected (as well as directly connected) storage devices to achieve high transfer rates and is designed to make data immediately available to all networked computing nodes, regardless of size, distribution, or location. All computer and storage nodes can be attached directly to the network so that data is transferred by the most direct route at network speeds without interruption.

HPSS uses data movers, which are specialized software modules used by the storage control system to send large data streams (such as complex images and visualization objects) directly to requesting computers without having to pass through the storage server itself. With the bottleneck removed, the only limiting factor in an HPSS environment is the maximum speed of the network itself. As speed and capacity of storage media and devices increase, HPSS will easily accommodate the technological changes to produce transfer rates of multiple giga-bytes per second, which will be

required by parallel computing, imaging, and scientific visualization applications.

HPSS uses advanced techniques to provide security and protection of such vast amounts of data moving at high speed. Data is protected from both unauthorized use and from corruption.

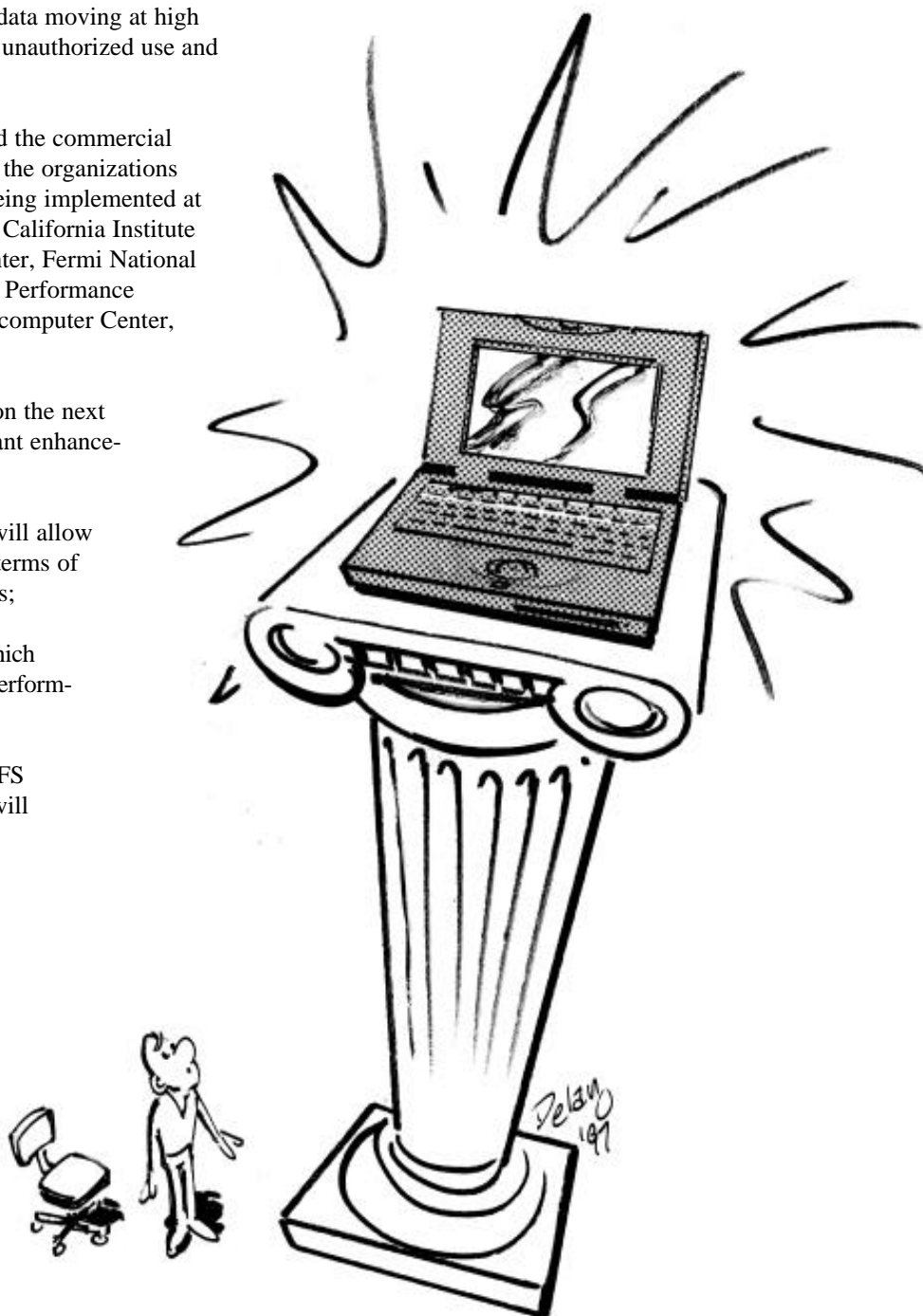
In September 1996, IBM announced the commercial availability of HPSS. In addition to the organizations where HPSS was developed, it is being implemented at many major computational centers: California Institute of Technology, Cornell Theory Center, Fermi National Accelerator Laboratory, Maui High Performance Computer Center, San Diego Supercomputer Center, and the University of Washington.

The development team is working on the next release, which will contain significant enhancements:

- scalability improvements, which will allow HPSS to grow extremely large in terms of both storage and number of servers;
- migration and purge processing, which will substantially improve overall performance; and
- hierarchical storage support for DFS (Distributed File System), which will allow HPSS users to access HPSS files through DFS clients.

HPSS allows researchers to more easily and quickly retrieve—and more effectively manage—the vast amounts of data required for solving tomorrow's complex problems. We expect HPSS will become the de facto standard for storage system software for high-performance computers.

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# Making the Web Accessible Part 1: Overview and Graphics

Most of us know the Web through the display of our computer monitor. We interact by typing on a keyboard or by pointing and clicking with a mouse. We see text and graphics on the monitor and hear audio files through the computer's speakers. We become familiar with this "cyberplace" through use, and we can easily become distracted, especially as authors, when designing for this familiar face of the Web.

That is not, however, the only face of the Web.

Since the outset, the first two words of "World Wide Web" have been intended to cut deep as well as broad. User communities are distinguished not just by geographic location, but by various capabilities and limitations. Some of us connect to the Web through a fast Ethernet connection; others, through a slow modem connection. Some of us experience it as graphics and text; others, as spoken words. (None of us, by the way, experiences it without some sort of translation; I have yet to meet anyone who can directly read the electrons themselves.)

Before proceeding farther, it might be useful to address a few myths:

**Myth 1:** "It is difficult, time-consuming, and expensive to make Web pages accessible." Wrong. As shown by the examples in this article, the inherent separation of content from presentation makes it easy to improve accessibility.

**Myth 2:** "Accessible pages can't make use of graphics, tables, audio, etc." Wrong again. All sorts of content and modern markup can be used, provided only that some content be provided in alternate forms.

**Myth 3:** "We're only doing it for a few of 'them'." Maybe the most pernicious myth of all. An accessible page benefits everyone, not just a particular, easily defined group. For starters, thinking of content from multiple angles helps us ensure better design for everyone. Furthermore, designing for multiple access devices can have unanticipated benefits for users with full use of their hands, eyes, and ears. (A classic example is the commuter driving down the road who wants to gather some information from the Web. Traditional browsing with a mouse and graphical monitor is not a good option, but using voice input and output devices is. The fact that such devices were originally designed for the blind does not prohibit others from making good use of them, and content designed to accommodate such devices offers unexpected benefits. Good design is good design, and maybe it'll keep us from getting side-swiped to boot.)

As usual, this article (and its planned follow up) will focus on practical Web design tips. More so than usual, I will draw heavily from work done by others, particularly those who are contributing to the Web Accessibility Initiative (WAI) for the World Wide Web Consortium (W3C). Addresses for source materials are available at the end of this article.

For this month, I'll discuss some of the available input/output devices, since they are what shape the way different people perceive our pages. I'll also discuss some ways to make graphics accessible. For the follow-up article, I plan to address text and page formatting issues, and ways to wrap everything together so that an entire Web space becomes more accessible.

## An Overview of Basic Input/Output Devices

The key to designing for accessibility is to understand the basic characteristics of the various input and output devices that are available for interacting with the Web. Each of these devices has strengths and weaknesses, and each raises its own set of design issues.

Most of us are familiar with the basic computer monitor, which is the most common way to display content visually. (Other visual output devices include WebTV, which shares most of the same characteristics as the monitor, and printed pages, which offer challenges of their own.) Even this most familiar of devices, however, can raise some accessibility issues:

- As mentioned in previous BITS articles, color depth and screen resolution vary, leading to different renderings on different monitors.
- Users can change font sizes to suit their preferences. Although this may tempt Web authors and designers to attempt to gain tighter control over the font sizes being used, we should remember that users with sight impairments may need the larger fonts to be able to read the text.
- Users can (and do) turn off graphics for a variety of reasons. Some are hindered by slow connections; others are in a hurry to get to "the meat"; still others are bothered by the distractions that graphics can create.
- Even when users "see" a display similar to what the author/designer sees, there can still be other limitations that they encounter. For example, users may not be able to hear audio files due to hearing impairments, file formats, hardware limitations, or bandwidth restrictions. In other



cases, they may have mobility impairments that make it difficult for them to select and activate links.

Other output devices include refreshable braille displays and speech synthesizers. Eventually these devices may be able to directly interpret HTML. For now, however, the more common approach appears to be to translate what is displayed on the screen into braille or speech. Direct translation of HTML offers the advantages of being able to use style sheets and of putting the content into an inherently more meaningful format, while screen reading has the advantage of being able to use a single tool for all computer applications (word processors, etc., in addition to the Web).

In general, screen readers read across the page from left to right one line at a time. They can only translate text, not graphics, and they can only recognize consistent, predictable fonts.

The basic input devices are a keyboard (or its equivalent) and a pointing device. Keyboard equivalents include on-screen alphabet displays that can be pointed at and selected, and voice recognition software (which, in addition to its use for the blind, is widely used as a keyboard supplement for people with carpal tunnel syndrome). Pointing devices are still more varied:

- The basic mouse comes in a variety of forms, including joysticks, pads that you run a finger across, and knobs that you push with a finger. Different people have different preferences, and different devices have different sensitivities (i.e., some are easier to point than others).
- There is increasing support for keyboard “pointing,” which allows you to tab through links on a page and then select a link to follow by pressing the return key or a similarly designated key.
- Head-pointing and eye-tracking tools can be used by people who do not have the use of their hands or voice. Note that it can be difficult to point these tools at small targets.
- Speech interfaces can support “pointing” by reading links, either in isolation or in context, and by then allowing the user to select whether to follow the link. Note, again, that these can only follow text links; graphics are unreadable.

The variety of pointing devices seems likely to continue to grow. WebTV, for example, might use a light wand that you can point at the TV screen. Even so, the variety of devices

listed above shows the limitations of our common “click here” way of thinking.

Although the variety of devices might seem daunting, HTML is well suited to providing accessibility. As an SGML language, HTML inherently separates content from presentation. An `<A HREF=??>` link is just that, a link, and different tools retain the freedom to present it in whatever form best suits the user. As the following examples show, accessibility is attainable if we just keep the characteristics of the various devices in mind as we design and implement our pages.

#### Use ALT Descriptions for Graphics

Since we know in advance that not everyone will see whatever graphics we use on our page, it is easy to plan alternative presentations of the same content. For simple graphics, the easiest way to do this is with the ALT attribute of the IMG tag:

```
<IMG SRC="filename.gif" ALT="A short description of the image">
```

Whenever graphics are turned off, the browser will display (or read) the description instead of the image.

If the image is a hot link (i.e., wrapped inside an `<A HREF=??>`), then the ALT description will generally be treated as a link in place of the image, which allows the functionality to be retained along with the content. Note that this approach only works when the image links to a single destination; image maps are discussed separately below.

When used consistently, the ALT attribute can also be used to signify decorative graphics that do not have any meaningful content. A widely suggested convention is to include an empty description for such graphics:

```
<IMG SRC="decorative.gif" ALT="">
```

Browsers will then display nothing in place of that image. As long as the convention is followed consistently, the user will know that he/she is not missing anything important.

#### Use a “D-Link” for Longer Descriptions

The limitation of the ALT attribute is that it can only be used for short descriptions, frequently limited, for example, to the size of the image itself if HEIGHT and WIDTH attributes are set. For images that require longer descriptions, the solution is to provide a link to a separate page that describes the image.

The WGBH PBS station in Boston, MA, pioneered the use of a “D-Link” (description link), an uppercase D set next to an image that is linked to the longer description:

```
<IMG SRC="filename.gif" ALT="follow D-link for description">
```

```
<A HREF="description.html">D</a>
```

This convention has gained wide support and can be useful if consistently used. Alternatives are to provide a more explicit text link (e.g., “or follow this link for a description of the image”) or to describe the image in more detail in the page it appears on (e.g., “As the chart shows, the number of system users has grown from 51 in 1995 to 311 in 1997”).

Note that descriptions should convey all of the meaningful information in a graphic, not just the simplest part to express. “This is a picture of a bird” is not as meaningful as “This is a picture of a white dove carrying a white ribbon, meant to symbolize the desire for peace in Northern Ireland.” In cases where the description becomes particularly lengthy, such as describing all the data points in a chart, it can help to put a summary first, with full details later.

#### Alternate Content for Image Maps

Image maps (graphics where clicking on different areas will take you to different links) present several problems for accessibility. Screen readers basically can’t read them at all, and the mobility impaired can have difficulty selecting the correct area.

To take the second issue first, make sure the areas are large enough to be easily selected. In general, this means that each area should be at least 1/2” by 1/2”, or roughly 40 pixels square. This will also make it easier for all users to select the area they want.

For client-side image maps, the ALT attribute can be used to provide alternate content for browsers that have images turned off:

```
<IMG SRC="map-image.gif" ALT="imagemap"
USEMAP="#map-1">
```

```
<MAP NAME="map-1">
```

```
<AREA COORDS="0,0,50,50" HREF="target-1.html"
ALT="description 1">
```

```
<AREA COORDS="0,50,50,100" HREF="target-2.html"
ALT="description 2">
```

```
</MAP>
```

Recent browsers will display the descriptions for each area in place of the image, and screen readers will be able to read and follow them.

This approach, however, does not work for server-side image maps or for longer descriptions. For these cases, a good solution is to have a link to a separate page that provides a text version of the image map’s content (or possibly a text version of the entire page). This can be a good use of the D-Link, but if a D-Link is used, the ALT attribute for the image itself should tell the user that the image is an image map and that the D-Link leads to alternate content.

Among the other approaches that have been suggested are the following:

- Use multiple smaller images, each with a separate ALT attribute, instead of the single image map. Potential problems with this approach include getting the images to align correctly and slowing down the loading of the page (since each image requires a separate HTTP call).
- Provide text version links in addition to the image map, generally immediately below the image. Potential problems with this approach include the fact that it might be confusing and it might clutter up the presentation on graphics browsers. (Note, however, that this is an approach I’ve long advocated for accommodating older browsers and browsers with their graphics turned off, and that there is no requirement that the alternate links be adjacent to the image map.)
- Use a separate transparent GIF with an ALT attribute for each of the links on the image map. Browsers with graphics turned on will not display them, but browsers with graphics turned off will display the ALT text. If you have adequate space to use this approach, be sure to use the same GIF image for all the links in order to take advantage of the browser’s cache and avoid needing to load each image separately.

Whichever approach is used, it is helpful to remain consistent throughout a Web space to make the space more predictable for users.

### Additional Information

As mentioned at the start of this article, I plan to write a follow-up article that deals with text and page formatting for accessibility. In addition, the following are a few of the many source materials that provide good, well thought-out information:

- “Unified Web Accessibility Guidelines,” Vanderheiden, et al.,

<http://trace.wisc.edu/HTMLGide/htmlgide.html>

- W3C Web Accessibility Initiative, Daniel Dardailler, lead,

<http://www.w3.org/WAI/>

- “Accessible Web Space Design,” Starling Access Services,

<http://www.igs.net/~starling/acc/actoc.htm>

- Web Page Accessibility Self Test, Public Service Commission of Canada,

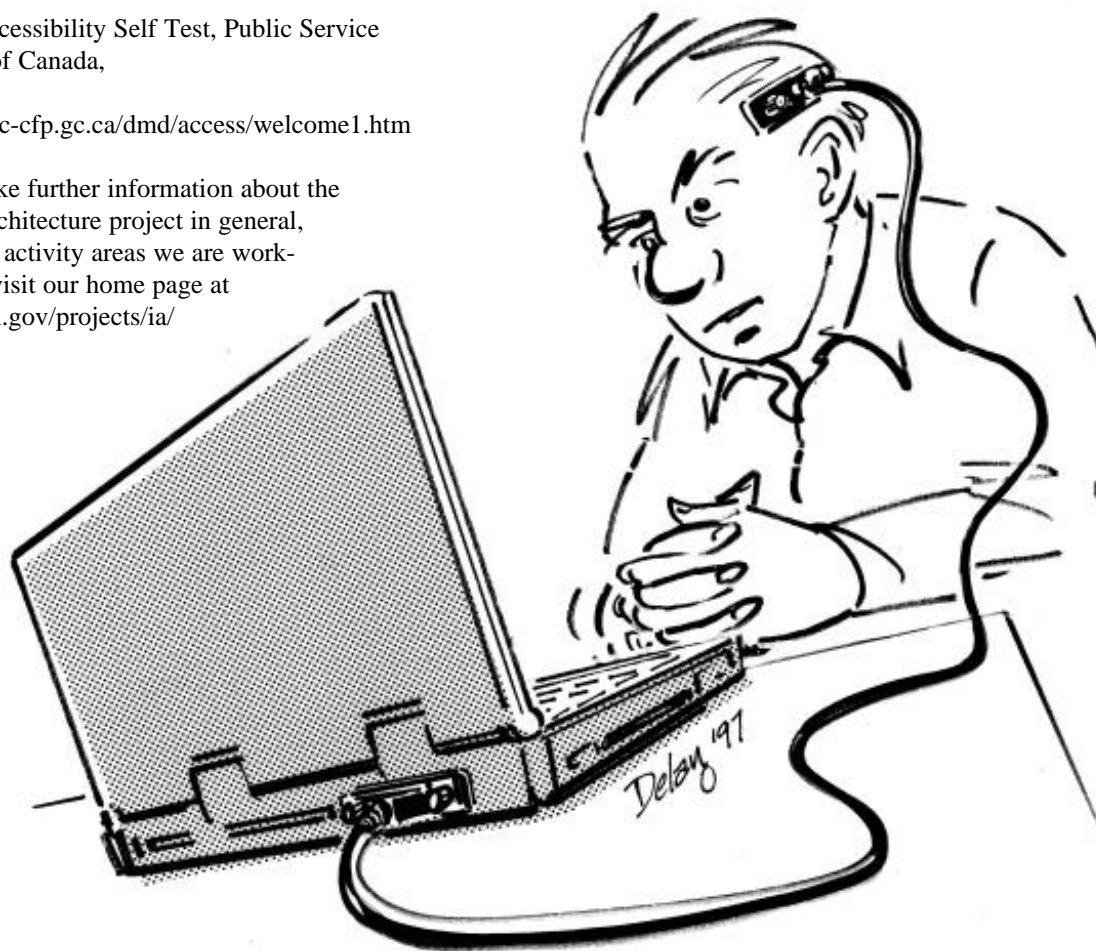
<http://www.psc-cfp.gc.ca/dmd/access/welcome1.htm>

If you would like further information about the Information Architecture project in general, including other activity areas we are working on, please visit our home page at <http://www.lanl.gov/projects/ia/>

(or look under “What’s New” from the Laboratory internal home page). If you would like further information about our IA General Internet/WWW activity area, please visit its page at <http://www.lanl.gov/projects/ia-lanl/area/web/> (access restricted to Laboratory machine addresses). If you would like printed or e-mail copies of any of the IA materials, please contact me at the address below.



*Tad Lane, [tad@lanl.gov](mailto:tad@lanl.gov), (505) 667-0886  
Information Architecture Standards Editor  
Communications Arts and Services (CIC-1)*



## Research Library's WWW Online Catalog Improved

The Research Library (CIC-14) has redesigned search screens and other features of its WWW Online Catalog to accommodate a new version of the Library's gateway software. The new Z39.50 gateway software is used for the Online Catalog and the DOE Energy Science and Technology Database. In response to customer feedback, we have made the following changes and enhancements:

- Browse and search modules have been combined into a single search screen, accessible throughout the system via the New Search button.
- Multiple input boxes have been added for word searches, making it easier to combine search terms.
- Refine search screen has been redesigned to parallel the structure of the first search screen. The refine search screen can be used to refine searches based on the outcome of the first search results.
- Requests (or holds) for books and reports in the online catalog are made possible with the Request Item and Options buttons.

When you request a book or report, the Library pulls the item from the shelf and either sends it via interoffice mail or holds it in the Library for pickup. (This is like "Hold title" in the telnet version of the online catalog).

To place a request, follow the instructions below:

- Click on the Options button and enter your Z# and preference for method of delivery.
- Click on the Request Item button on either the brief or full display of the item you are interested in.
- The system will confirm your request with a full record display showing a confirmation message.

Note: The request feature is only available to Laboratory staff (using a lanl.gov IP address) and other authorized users.

To access the online catalog, go to the Library's Electronic Databases page (<http://lib-www.lanl.gov/edata/edata.htm>) and under Online Catalog or DOE Energy Science and Technology Database click on the WWW link.

Please use the Comments button to send comments, questions, or suggestions for future enhancements. Your input is valued.

*Kathy Varjabedian, kv@lanl.gov, (505) 667-3031*  
*Research Library (CIC-14)*

## Web Sites on Datamining

- An introduction on Datamining" by Kurt Thearling:

<http://www.santafe.edu/~kurt/dmintro/dmintro.htm>

- An introduction to data mining, what it is, how it is used, and where it may go in the future:

[http://www.gslis.utexas.edu/~palmquis/courses/project/d\\_mining.htm](http://www.gslis.utexas.edu/~palmquis/courses/project/d_mining.htm)

- Information on Machine Discovery Terminology:

<http://orgwis.gmd.de/projects/explora/terms.html>

- The Knowledge Discovery Mine contains a guide to commercial and public domain data mining tools, a newsletter, links to Web sites, and research materials:

<http://www.kdnuggets.com/>

- The Data Mine provides information about Data Mining and Knowledge Discovery in Databases (KDD), also known as Knowledge Acquisition from Databases and Knowledge Discovery:

<http://www.cs.bham.ac.uk/~anp/TheDataMine.html>

- The Datamation's Datamining Web page:

<http://www.datamation.com/PlugIn/workbench/datamine/datamine.htm>

*Frances Knudson, fknudson@lanl.gov, (505) 667-9233*  
*Research Library Group (CIC-14)*

## CIC-6 Desktop Consulting Statistics

The Customer Service Group (CIC-6) currently has 4.5 FTEs answering phones to help Laboratory personnel with their desktop computing problems. These phones are answered weekdays from 8:00 to 12:00 and 1:00 to 4:30 except on Wednesdays when the hours are 8:00 to 11:00 and 1:00 to 5:00. Tables 1-3 give the Remedy database statistics for the desktop consulting calls that were made during the month of September 1997.

*Weldon Scoggins, wjs@lanl.gov, (505) 667-8220*

*Customer Service Group (CIC-6)*

Table 1. Consulting Calls for Apple Computing

Item	Apple Hardware	Apple Software	Total	Item	Apple Hardware	Apple Software	Total
Acrobat Reader		2	2	Microsoft Word		22	22
ADSM		2	2	Monitor	5		5
CD-ROM	1		1	Netscape		12	12
CPU	1		1	Network	5	2	7
Eudora		24	24	Other	8	57	65
Hard Drive	1		1	Printer	6		6
JetForm		4	4	Printing		12	12
Labwide		13	13	SCSI Peripheral	6		6
Lotus Notes		1	1	SLIP/PPP		21	21
Memory	6		6	System Software		46	46
Microsoft Excel		8	8	Telnet		9	9
Microsoft Office		2	2	Virus Protection		6	6
Microsoft PowerPoint		4	4	<b>Total</b>	<b>39</b>	<b>248</b>	<b>287</b>
Microsoft Project		1	1				

Table 2. Consulting Calls for PC Computing

Item	PC Hardware	PC Software	Total
Acrobat Reader		5	5
ADSM		1	1
CPU	2		2
Eudora		44	44
Hard Drive	4		4
IB printing		12	12
JetForm		25	25
Labwide		33	33
Meeting Maker		2	2
Memory	1		1
Microsoft Access		5	5
Microsoft Excel		6	6
Microsoft Office		5	5
Microsoft PowerPoint		4	4
Microsoft Word		26	26
Monitor	3		3
Netscape		20	20

Item	PC Hardware	PC Software	Total
Network		12	12
OnNet		19	19
Other	7	41	48
Printer	5		5
Register		3	3
SLIP/PPP		30	30
Virus Protection		5	5
Windows 3.1		6	6
Windows 95		60	60
Windows NT		33	33
<b>Total</b>	<b>22</b>	<b>397</b>	<b>419</b>

Table 3. Consulting Calls for Apple and PC

Customer Service Requests/Halifax	175
Customer Service Requests/CIC-2	45
Customer Service Requests/Follow-up	8
Electronic Software Distribution Questions	38
Other Questions	42

## Research Library Training

The LANL Research Library provides training for using its specialized databases. Training sessions begin and end at times indicated below. Classes are free but you must preregister by calling the Research Desk at 7-5809 or sending e-mail to [library@lanl.gov](mailto:library@lanl.gov). Special classes and orientations can also be arranged.

<b>Date</b>	<b>Time</b>	<b>Subject Matter</b>
11/4/97	1:00 - 1:30 p.m.	Research Library Catalog via the WWW
11/6/97	1:00 - 1:30 p.m.	SciSearch Alerting Service
11/12/97	1:00 - 1:30 p.m.	Finding Addresses and Phone Numbers on the WWW
11/13/97	2:00 - 4:00 p.m.	InfoSurfing: Basic Web Searching Strategies
11/18/97	1:00 - 1:30 p.m.	Environmental Resources on the WWW
11/19/97	1:00 - 1:30 p.m.	Introduction to Electronic Library Resources
11/20/97	1:00 - 1:30 p.m.	Federal Regulations on the Internet

## Labwide Systems Training

The Customer Service Group (CIC-6) offers training for users of Laboratory information systems. The CIC-6 courses offer training for a variety of personnel including property administrators, group secretaries, training coordinators, budget analysts, group leaders, or anyone needing to access training records, property records, costs, employee information, travel, chemical inventories, etc. Refer to the table below for specific information about courses currently offered.

You must have a valid ICN password before taking any of the courses shown in the table. To register for a course, call the CIC-6 Training, Development, and Coordination section at 667-9559 or access our Web page. From the LANL home page, look under "Services/Computing at LANL/Training" or enter the URL: <http://www.lanl.gov:8010/computer-information/cic6/teampage.html>.

Course Title	Date	Time	Cost	Course Number
Employee Development System - Basic Training (EDS I)	11/5/97 & 12/3/97	8:30–12:00	\$375	Course #5289
The course provides hands-on instruction to request course enrollment, use the on-line course catalog, retrieve training transcripts, and assign EDS authorities. The student will learn to create courses, add students to the courses, and generate several training reports.				
Employee Development System - Training Plans (EDS II)	11/19/97 & 12/18/97	8:30–12:00	\$375	Course #7155
Participants receive hands-on instruction to create and maintain training plans, assign assignment codes, and generate training plan reports. Attendees must have prior training in the Employee Development System.				
Eudora Electronic Mail	TBA	1:30–3:30	\$200	Course #9762
This class is a hands-on class that teaches the participant how to use Eudora software to create, send, receive, and edit electronic mail messages. In addition to these procedures, the participant will learn what related settings mean and how to configure the system to meet his or her individual needs.				
Data Warehouse Basics	11/7/97 & 12/9/97	8:30–10:30	\$200	Course #11961
Students will receive hands-on training to generate standard reports and make quick queries from information in the data warehouse, a real-time collection of data tables from Laboratory financial, time-reporting, and personnel systems.				
Data Warehouse/ Financial Reporting	11/7/97 & 12/9/97	10:30–12:00	\$200	Course #11960
Prerequisite: Data Warehouse Basics. Students will receive hands-on training to generate standard financial reports and make on-line queries from information in the "data warehouse," a collection of data from Laboratory budgeting, accounting, and time-keeping systems.				
HTML Basics	11/4/97 & 12/2/97	8:30–12:00	\$375	Course #11605
Students will gain a basic understanding of HTML (Hypertext Markup Language), the language for the World Wide Web. Topics covered will be commands and standards, creating and editing documents, and authoring programs.				



Course Title	Date	Time	Cost	Course Number
HTML Tables	TBA		\$375	Course #11959
Students gain basic understanding of how to create various tables in HTML and new tags in HTML 3.0. Netscape-specific tags are also identified for clarity. Prerequisite: HTML Basics or permission of the instructor.				
Utilizing Netscape	TBA	8:30–10:30	\$200	Course #10961
Students gain basic understanding of the Internet, the World Wide Web, and Netscape as a browser to surf the Net. Topics covered are both Laboratory sites and open sites, along with practical uses of the Internet.				
Notes Basics 4.5	11/20/97 & 12/10/97	8:30–12:00	\$375	Course #9917
Participants receive hands-on computer instruction to learn to create and send Notes e-mail memos, fax documents, search on one or multiple databases, use views and folders, create nicknames and distribution lists, set defaults, create doclinks, send attachments, and replicate databases.				
Meeting Maker	11/4/97 & 12/2/97	1:30–3:30	\$200	Course #12395
Students learn how to create an address book, create personal groups, utilize the Auto-Pick feature, utilize e-mail integration with non-Meeting Maker users, and customize various Meeting Maker features.				
Reporting with Infomaker	12/12/97	8:30–5:00	\$650	Course #11054
Hands-on training to query data and develop ad hoc, or non-standard, reports from the LANL data warehouse using Infomaker software.				
Time and Effort System (GUI)	11/25/97 & 12/16/97	8:30–10:30	\$200	Course #11018
The student will learn how to enter attendance, amend attendance, approve attendance, and submit exception and approval reports. Time codes and associated policies will be discussed. The student will also learn how to use the Information Manager utility to view and print reports.				
Travel	11/17/97 & 12/9/97	1:00–4:30	\$375	Course #12091
Hands-on training to submit and approve travel requests and expenses in the new Travel System which replaces the TRIPS on-line system and the post-travel expense worksheets.				

## Advanced Technical Computer Training

The Customer Service Group (CIC-6) supports advanced technical training in computing areas such as programming languages, system administration, networking, and World Wide Web development tools. The support provided by CIC-6 can be as limited as providing the appropriate facilities for a specific group or as extensive as coordinating training functions such as system administration, vendor acquisition, EDS administration, and class facilitation. The table below lists classes that are either currently being offered or are available on request. An expanded list of classes that are potentially available can be viewed on the Internet at <http://www.lanl.gov:8010/computer-information/ComputerTraining/Vendor.html>. To request registration in any course or for general assistance, please contact the CIC-Division Advanced Technical Computer Training Coordinator at (505) 667-9399 or send e-mail to [cic6-train@lanl.gov](mailto:cic6-train@lanl.gov). \*Cost per student will vary depending on the total number of students enrolled in the class.

Course Title	Date	Time	Cost	Course Number
C Programming (Beginning)	12/1-5/97		\$1600-\$2000*	3996
Prerequisite(s): Knowledge of another high-level Programming Language. Topics Include: Fundamentals; History and Uses of C; Current State of Standard; Elements of C; Concepts and Terminology; Basic Structure of Program; Good and Bad Aspects of C; Data Types, Arrays, Structures, Pointers, Unions, and Bitfields; Operators and Expressions; Storage Classes; Library Functions; File I/O; Math, String, Database Operations; Modular Programming; Preprocessors, Macros, Conditional Inclusions/Expressions, Types, and Prototype; Additional Tools; Control Flow Constructs; Debuggers; and Additional Libraries.				
C++ for Experienced C Programmers	3/2-6/98		\$1600-\$2000*	9050
Prerequisite(s): Excellent C Language programming skills. Topics Include: Major Differences and Additions to ANSI C; Building C++ Classes; Introduction to Text I/O with C++; Function Overloading; Single Inheritance; Virtual Functions; Multiple Inheritance; Operator Overloading; Creating, Initializing and Assigning Objects; Passing and Returning Objects; Templates, Parameterized Functions and Classes; C++Stream I/O with the File System; and C++ Course Summary.				
IDL Programming, Foundations of	Available on Request (4 days)		\$1700-\$1900*	14421
Prerequisite(s): Beginning or intermediate programming experience. Topics Include: Insight; Integrated Development Environment (IDE); IDL Programming Basics; Reading and Writing Data; Plots, Surfaces, and Contours - Direct Graphics System; Imaging - Direct Graphics System; 3D Volume Rendering - Direct Graphics System; Hardcopy Output; Writing IDL Programs; Introduction to Pointers; Introduction to Object Graphics System; Graphical User Interfaces (GUI); GUI Programming Tricks; Math and Statistics; DataMiner - Connecting to Databases; and Executing External Programs.				
IDL Programming, Advanced	Available on Request (4 days)		\$1700-\$1900*	
Prerequisite(s): Completion of Foundations of IDL Programming course or equivalent knowledge and experience. Topics Include: IDL Objects; IDL Object Graphics Workshop; GUI Programming Tricks; Linking IDL to Other Software; Printing in IDL; Building Graphical User Interfaces; IDL Memory Management; and Advanced Mathematics and Statistics. A discussion of the new features of IDL's latest release is included.				
Perl Programming	11/18-21/97		\$1600-\$2000*	8095
Prerequisite(s): Knowledge of Unix, the ability to edit text files (using vi or the OpenWindows Text Editor), and the ability to use basic programming constructs (variables, loops) to write simple programs in at least one programming language. Topics Include: Use Perl's Scalar Variables, Arrays, and Associative Arrays, Including Built-In Functions; Use Perl's				

Course Title	Date	Time	Cost	Course Number
Perl Programming (continued)	Various Operators (Arithmetic, Conditional, String, Etc.); Use Regular Expression Metacharacters and Statement Modifiers; Open Files, Directories, and Input/Output Filters via Filehandlers; Use the Unix System Interface Functions; Create Subroutines and Use the Perl Standard Library; Use Packages for Encapsulation; Handle Signals and Errors; and Write Nawk-Like Reports.			
SGI Network Administration	4/20-24/98		\$1800-\$2300*	11690
	Prerequisite(s): Completion of Silicon Graphics System Administration (Beginning) course or equivalent knowledge and experience. Topics Include: Networking Fundamentals; Network Configuration; Network Troubleshooting; Resource Management with Network; Information Services; Domain Management with Domain Name System; Electronic Mail with Sendmail; Remote File Sharing with Network File System & Automounter; Network Performance Monitoring; and Network Security.			
SGI Origin 2000 for ASCII/ACL Programmers	Available on Request (4 hours)		\$250	14059
	This course is for programmers who need training in the Silicon Graphics programmer environments on the Los Alamos ASCII Origin 2000 systems. Prerequisites: Experience writing and debugging programs in C, C++, or Fortran and experience using appropriate Irix, UNICOS, or UNIX commands. Topics Include: Using the Load Share Facility at Los Alamos; Silicon Graphics Fortran, C, and C++ Compiler Command-Line; Using the Build Manager Tools to Compile Programs; Using the Source View, File Browser, Silicon Graphics Help, and Graphical View; Using the Static Analyzer to Create Filesets and Databases, and to Make Queries; Setting Traps (Breakpoints) and Looking at Data Using the Debugger; Setting Fast Watchpoints; Using the Fix+Continue Feature to Debug and Prototype Changes; Utilizing the Authentication Process (Kerberos, Ssh, DCE/DFS); and Utilizing HPSS.			
SGI Performance Evaluation and System Tuning for Origin2000 and Onyx2	Available on Request (5 days)		\$1800-\$2300	
	Prerequisite(s): SGI system administration experience. Topics Include: Kernel Debugging and Configuration, CPU, Memory, Swap, and Disk Tuning Techniques; Performance Analysis Methodology; Analysis of System's Hardware Configuration; Analysis of System's Software Configuration; Performing System Analysis; Monitoring System Usage; Application Tuning; Filesystem Tuning; CPU Tuning; Filesystem Buffer Cache and Tuning; Memory Management and Tuning; NUMA-Specific Memory Management and Tuning; Workload Management and Tuning; and Miser and Tuning.			
SGI ProDev Workshop	Available on Request (4 days)		\$1500-\$1900	12895
	Prerequisite(s): C, C++, or Fortran77 Programming experience. Topics Include: Silicon Graphics C, C++, and Fortran77 (not Fortran90) Compiler Environment Including Compiler Use and Compiler Flow; Customizing the ProDev Environment Including Changing Color Schemes, Using the Source View, File Browser, Silicon Graphics Help, and Graphical View; Using UNIX Regular Expressions; Writing Simple Make(1) Files; Using the Build Manager Tools to Compile Programs; Using the Static Analyzer to Create Filesets and Databases and to Make Queries; Setting Traps (Breakpoints) and Looking at Data Using the Debugger; Setting Fast Watchpoints; Using the Fix+Continue Feature to Debug and Prototype Changes; Profiling Your Code and Determining Resource Usage Using the Performance Analyzer; Doing Heap and Memory Fragmentation Analysis Using Heap View; Determining the Coverage of Your Software Tests with Tester; Tuning Your C, C++, and Fortran77 Code for Silicon Graphics; and Tuning Your Code for Memory and I/O Bottlenecks.			
SGI System Administration (Beginning)	1/26-30/98		\$1800-\$2300*	11688
	Prerequisite(s): Familiarity with using Silicon Graphics IRIS workstations and system administration procedures on other open system platforms. Topics Include: The Role of the System Administrator; Set Up and Configuration of an IRIS Workstation or Server; Supporting a Group of Silicon Graphics Users; System Security Maintenance; Backups and Recoveries; Configuration of Disk Drives; System Installation and Application Software; Attaching Terminals and Printers; Modifying the system Start Up and Shut Down Sequences; Automating Administrative Procedures; and Performing Basic System Troubleshooting.			

Course Title	Date	Time	Cost	Course Number
SGI System Administration (Advanced)	2/23–27/98		\$1800–\$2300*	11689
	Prerequisite(s): Completion of Silicon Graphics System Administration (Beginning) course or equivalent knowledge and experience. Topics Include: System Error Monitoring; Kernel Reconfiguration and Debugging; System Monitoring Tools; Process Management; MultiProcessor CPU Management; Memory Management and Tuning; Swap Management and Tuning; Disk Management and Tuning; XPS Filesystem Management; and System Security Concepts.			
Solaris 2.X System Administration (Beginning)	Available on Request (5 days)		\$1600–\$2000*	7477
	Prerequisite(s): Knowledge of Unix commands and an editor. Topics Include: Custom Install a Solaris 2.X Server; Use the Solaris 2.X Device Naming Conventions; Use the Format Utility to Display Partition Information; Change System Run Levels; Add Startup Files for Additional Services; Add and Remove Software Packages; Add Peripheral Devices, Configure Terminals and Modems; Administer Disks and File Systems; Configure NFS to Support the Client-Server Environment; Use the Automounter; Add and Remove Diskless Clients; Back Up and Restore File Systems; Perform Basic Recovery and Troubleshooting Procedures; and Use Scripts to Configure and Administer the NIS+ Environment.			
Solaris 2.X Network Administration	Available on Request (5 days)		\$1600–\$2000*	8107
	Prerequisite(s): Completion of Solaris 2.X System Administration (Beginning) class or equivalent knowledge and experience. Topics Include: TCP/IP Networking Model's Major Protocols; Monitor Network Traffic; Monitor and Control the Address Resolution Protocol Cache; Set Up, Configure, and Manage a Sun Internet Router with Subnets; Identify the Differences Between TCP and UDP; Manage Client-Server Transport Layer Communications; Configure and Maintain RPC-Based Applications Support; Describe Common Applications, Systems, and Network Bottlenecks; Test and Monitor System, Disk, and Network Loads; Use Monitoring Commands to Find Performance Bottlenecks; Set Up and Maintain a Simple Domain Naming Service (DNS) Environment; Set Up a Jumpstart Automated Network Installation Server; Identify Sendmail Functionality and Configuration; Install a Mail Server; and Install UUCP Between Existing Solaris 2.X Systems.			
Solaris 2.X Server Administration	Available on Request (4 days)		\$1600–\$2000*	
	Prerequisite(s): Solaris 2.X Beginning System Administration class and six months of experience OR two years of Solaris 2.X system administration experience. Topics Include: Install and Use Solstice Backup; Install and Use Solstice DiskSuite; Configure a Sun X-Terminal; List the Different Accounting Types and Set Up Accounting; List the Different License Configurations and Install a License Server Using FLEXlm; and List Reasons to Distribute Data and Use rdist for Data Distribution.			
UNIX (Basic)	Available on Request (4 mornings)		\$400	5267
	Prerequisites: Basic computer literacy (knowledge of the keyboard and mouse) are helpful. Topics: Getting Started; UNIX File System; Editing with VI; Manipulating Files; Using C-Shell Features; Customizing Your Environment; Navigating the Network; Job Control; Generic UNIX E-mail; and Electronic Mail Registration (EMR).			
UNIX (Advanced)	Available on Request (4 mornings)		\$400	12972
	Prerequisites: The Basic Unix class or equivalent knowledge. Topics: File Manipulation; File Reorganization; Network File System Concepts; Introduction to C-Shell Scripts; Conditional Execution; Shell Programming; The Korn Shell; Korn Shell Script Features; and SED Filtering Tool.			

# INTEGRATED COMPUTING NETWORK (ICN) VALIDATION REQUEST

## Instructions:

- (1) Complete all parts of this form that apply to you. Please take note of the "Special Requirements" section and complete any applicable parts.
- (2) Manager (Group Leader or above) authorization and signature are required for all validation requests.
- (3) Before submitting this request, ensure that your Employee Information System (EIS) information is current.
- (4) Once completed, either mail this request to the Password Office at MS-B251, fax it to (505) 667-9617, or, if you are cleared, handcarry it to TA-3, SM-200, Room 257.

If you have **questions** call (505) 665-1805 or send e-mail to [validate@lanl.gov](mailto:validate@lanl.gov)

## Owner Information

Z-Number (if you have one)		Name (last, first, middle initial)	
LANL Group	Phone Number	LANL Mail Stop	Citizenship (Foreign National see "Special Requirements-Foreign National")

**Check LANL affiliation:**

☐ LANL employee

☐ Contractor \_\_\_\_\_  
(specify contract company)

☐ External user \_\_\_\_\_  
(specify employer)

☐ Other (specify) \_\_\_\_\_

**Send password / smartcard to:**

☐ Mail Stop    or    ☐ Mail to address indicated below

Name / Organization

Address

City, State, Zip Code

## Access    Check access method and needed partitions:

<b>Access method:</b> <input type="checkbox"/> ICN Password <input type="checkbox"/> Smartcard <input type="checkbox"/> Both	
<input type="checkbox"/> <b>Open</b> partition (e.g., open machines, or for dial up access )	
<input type="checkbox"/> <b>Administrative</b> partition (e.g., Travel, Data Warehouse, IA [BUCS, Stores], IB [EIS, FMIS, PAIRS] ) If you are not a cleared LANL employee, see required steps in section "Special Requirements-Administrative Partition".	
<input type="checkbox"/> <b>Secure</b> partition (i.e., secure machines ) A Q-clearance is required for secure access. After obtaining Manager signature for Secure access, handcarry this form to the Password Office to obtain your Secure account.	<div style="border: 1px solid black; padding: 5px;"> <p>I certify this person does require <b>secure</b> access:</p> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <span>_____ Manager Signature    (Group Leader or above)</span> <span>_____ Date</span> </div> </div>

## Password Office Use Only

New <input type="checkbox"/>	Change <input type="checkbox"/>	Clearance Status	Processed	Lv	Smartcard Serial #
Comments:					

## Special Requirements

### Administrative Partition

Lab-Wide Systems (e.g., Travel, Data Warehouse, IA [BUCS, Stores], IB [EIS, FMIS, PAIRS] )

☐ Under 18  
years of age

If you need to access Administrative systems, your Group Leader must provide a memo accepting responsibility for your actions and justifying your need for access. This memo is to accompany all forms taken to the security briefing (see "Contractor or Non-Cleared") section below. You may not access the Secure Partition.

☐ Contractor or  
Non-Cleared

Phone (505) 665-4444 (option #2) to obtain Access Authorization packet.

Phone (505) 667-9153 to schedule a security briefing.

Bring all forms including this ICN Validation Request to the security briefing for approval.

CIC-6 Security Briefing Approval Signature

Date

☐ Foreign National

Attach a copy of Form 982 (REQUEST FOR UNCLASSIFIED VISIT OR ASSIGNMENT BY A FOREIGN NATIONAL) with all approval signatures. Be sure Box #11 of Form 982 is completed. If you are not a visitor/assignee under a LANL/DOE approved Visit / Assignment Request, attach written justification from your host Group Leader or Division Director describing your need to access the ICN.

### Authorization (required)

Print Manager Name (Group Leader or above)	Manager Z-Number	Group
Manager Signature (Group Leader or above)	Mail Stop	Date

If you are NOT a LANL employee you must have a LANL contact and obtain the contact's signature in addition to the contact's manager's signature.

**LANL contact: Read the following and sign below.**

By signing this form I affirm that I understand and accept the following:

- I am a regular Laboratory employee.
- I am responsible for forwarding password reauthorizations and verifying annual account reauthorizations for this user.
- I am responsible for notifying the Password Office within 10 days of changes in my status.
- I am responsible for notifying the Password Office immediately of changes in this user's status (termination, end of contract, etc.).

Print LANL Contact Name	Contact Z-Number	Phone Number	Group
LANL Contact Signature	Mail Stop	Date	

NOTE: All Laboratory computers, computing systems, and their associated communication systems are for official business only. By completing this validation request and signing for a password and/or smartcard, you agree not to misuse the ICN. The Laboratory has the responsibility and authority to periodically audit user files.

## Reader Feedback

Feedback helps us to provide a document that responds to the changing needs of its readership. If you have comments or questions about this publication, please let us hear from you. We have reserved the back of this form for that purpose. We also accept articles for publication that are of interest to our readers. Contact the managing editor for more information. This form is also used for new subscriptions, deletions, or changes. Instructions are on the back. If you prefer to contact us by E-mail, send your comments and/or subscription request to [finney@lanl.gov](mailto:finney@lanl.gov).

Do Not Staple  
Fold on This Line First



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

### BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 88 LOS ALAMOS NM

POSTAGE WILL BE PAID BY THE ADDRESSEE

MAIL STOP B251  
ATTN: MIKE FINNEY, MANAGING EDITOR  
CUSTOMER SERVICE GROUP (CIC-6)  
LOS ALAMOS NATIONAL LABORATORY  
PO BOX 1663  
LOS ALAMOS NM 87544-9916



Do Not Staple, Seal with Tape  
Fold Here

cut along dashed line

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

BITS is published by Los Alamos National Laboratory. If you would like to be added to or deleted from our mailing list, please check the appropriate line, complete the form below, and mail us the form.

\_\_\_\_\_ Delete my name from the BITS mailing list.

\_\_\_\_\_ Change my name/address as indicated below.

Date

Mail Stop

## Organization

Zip

Employee Z#



# INDEX

Keywords	Title of BITS Article	Date	Page
<i>Apple</i>	<i>Apple's NeXT OS Plans</i>	<i>Feb. '97</i>	<i>17</i>
<i>ASCI</i>	<i>The Accelerated Strategic Computing Initiative (ASCI)</i>	<i>Feb. '97</i>	<i>1</i>
<i>Advanced Networking Projects</i>	<i>Advanced Networking Projects Support High-Performance Computing at Los Alamos</i>	<i>Nov. '96</i>	<i>2</i>
<i>Beta</i>	<i>The Phasing out of Beta and Its Alternatives</i>	<i>Nov. '96</i>	<i>8</i>
<i>CCVAX</i>	<i>CCVAX Machine to be Decommissioned</i>	<i>Aug. '97</i>	<i>1</i>
<i>CFT77 Compiler</i>	<i>New Version of CFT77 Compiler Temporarily Available</i>	<i>Sept. '97</i>	<i>11</i>
<i>CIC (Computing, Information, &amp; Communications)</i>	<i>CIC Division Strategies and Tactical Goals</i>	<i>May '97</i>	<i>6</i>
	<i>CIC Division Annual Report Available On Line</i>	<i>Oct. '97</i>	<i>7</i>
<i>CIC-6</i>	<i>Desktop Consulting Moves to CIC-6</i>	<i>Feb. '97</i>	<i>6</i>
	<i>CIC-6 Provides Desktop Consulting</i>	<i>Mar. '97</i>	<i>1</i>
	<i>The CIC-6 Training, Development, and Coordination Team</i>	<i>May '97</i>	<i>1</i>
<i>Cluster</i>	<i>TeX on the Cluster</i>	<i>Nov. '96</i>	<i>13</i>
	<i>IBM XL High-Performance Fortran Now Available on the Open Cluster</i>	<i>Nov. '96</i>	<i>14</i>
<i>Database</i>	<i>DOE Energy Science &amp; Technology Database Coverage Expanded</i>	<i>Feb. '97</i>	<i>7</i>
	<i>BIOSIS Database Now Available Via CIC-14</i>	<i>Feb. '97</i>	<i>7</i>
	<i>DOE Energy Database Now Available in a WWW Version</i>	<i>Apr. '97</i>	<i>3</i>
<i>Electronic Journals</i>	<i>Improved Access to Electronic Journals from Your Desktop</i>	<i>Apr. '97</i>	<i>2</i>
<i>E-mail</i>	<i>Capturing E-mail as a Record at LANL</i>	<i>Nov. '96</i>	<i>5</i>
	<i>MacTips: Dealing with [E-mail] Attachments in Eudora Pro</i>	<i>Aug. '97</i>	<i>16</i>
<i>Employee Information System</i>	<i>Keeping the Employee Information System Current</i>	<i>Sept. '97</i>	<i>2</i>
<i>Environmental Management</i>	<i>Workshop on the Role of Modeling and Simulation in Environmental Management</i>	<i>Aug. '97</i>	<i>2</i>
<i>External Computing Project</i>	<i>External Computing Project</i>	<i>Dec. '96</i>	<i>9</i>
<i>Fortran 90</i>	<i>Fortran 90, Programming Environments, and Policy</i>	<i>Sept. '97</i>	<i>12</i>
	<i>The Removal of Fortran 90 1.0 Version</i>	<i>Sept. '97</i>	<i>16</i>
<i>Gartner</i>	<i>Gartner Group Services Available on the Web</i>	<i>June '97</i>	<i>4</i>
	<i>GartnerWeb Update</i>	<i>Aug. '97</i>	<i>5</i>
<i>GNU Utilities</i>	<i>GNU Utilities Now Available Locally on /usr/lanl</i>	<i>Dec. '96</i>	<i>10</i>
	<i>More GNU Utilities Available in /usr/lanl</i>	<i>Sept. '97</i>	<i>6</i>
<i>HPD (Heterogeneous Parallel Debugger)</i>	<i>HPD: Heterogeneous Parallel Debugger</i>	<i>Nov. '96</i>	<i>2</i>
<i>HTML (HyperText Markup Language)</i>	<i>The Current State of HTML</i>	<i>Dec. '96</i>	<i>11</i>
	<i>The Current State of HTML: Part II</i>	<i>Feb. '97</i>	<i>8</i>
	<i>The Coming of Age of HTML Frames</i>	<i>Sept. '97</i>	<i>7</i>
<i>ICN (Integrated Computing Network)</i>	<i>The ICN Consulting Office</i>	<i>Feb. '97</i>	<i>4</i>
	<i>The ICN Password Office</i>	<i>June '97</i>	<i>1</i>
<i>ICNN (Integrated Computing Network News)</i>	<i>The Integrated Computing Network News (ICNN) Web Site</i>	<i>May '97</i>	<i>3</i>
<i>JavaScript</i>	<i>JavaScript Observations and Tips: Part I</i>	<i>Mar. '97</i>	<i>10</i>
	<i>JavaScript Observations and Tips: Part II</i>	<i>May '97</i>	<i>11</i>
<i>Lab-Wide Systems</i>	<i>Consulting for Lab-Wide Systems</i>	<i>Dec. '96</i>	<i>1</i>
	<i>Lab-Wide Information Systems Descriptions</i>	<i>Dec. '96</i>	<i>3</i>
	<i>Authorities for Lab-Wide Systems</i>	<i>Dec. '96</i>	<i>6</i>
	<i>Common Validation Error Messages and Possible Solutions for Lab-Wide Systems</i>	<i>Feb. '97</i>	<i>11</i>
	<i>Accessing GUI Lab-Wide Systems on the Macintosh</i>	<i>Mar. '97</i>	<i>9</i>
	<i>Customer Feedback Guides Improvements to Labwide Systems</i>	<i>Aug. '97</i>	<i>4</i>
<i>Macintosh</i>	<i>MacTips: Mac OS 8.0</i>	<i>Sept. '97</i>	<i>10</i>
<i>Maple</i>	<i>Vendor Training Available for Maple Users</i>	<i>Dec. '96</i>	<i>17</i>

Keywords	Title of BITS Article	Date	Page
<i>Mathematica</i>	<i>Mathematica Tutorial Available on the Web</i>	<i>Feb. '97</i>	<i>12</i>
<i>Mercury</i>	<i>Workout with Mercury—Step by Step File Transfer Using Mercury</i>	<i>Dec. '96</i>	<i>14</i>
<i>Micoms</i>	<i>The End of an Era: No More Micoms</i>	<i>May '97</i>	<i>2</i>
<i>Microsoft</i>	<i>Software Discounts Available through Microsoft SELECT</i>	<i>Feb. '97</i>	<i>6</i>
	<i>New Microsoft SELECT Program Lowers Software Costs</i>	<i>Mar. '97</i>	<i>2</i>
	<i>New Software-Purchasing Feature Brings Savings on Microsoft Upgrades</i>	<i>June '97</i>	<i>9</i>
	<i>Laboratory Stretches Software Dollars [Microsoft SELECT]</i>	<i>Aug. '97</i>	<i>15</i>
<i>Modeling</i>	<i>Modeling Ultra-Low Loss Accelerators</i>	<i>Nov. '96</i>	<i>1</i>
<i>Modem</i>	<i>New Dial-Up Modem Number for Accessing E-mail from Home or Travel</i>	<i>Aug. '97</i>	<i>5</i>
<i>Oil Reservoir Simulation Project</i>	<i>Amoco/LANL/CRI High-Performance Oil Reservoir Simulation Project</i>	<i>Sept. '97</i>	<i>1</i>
<i>PAGES (Print And Graphics Express Station)</i>	<i>PAGES Replaces ILFORD Printer with FUJI Printer</i>	<i>Nov. '96</i>	<i>9</i>
<i>Pagemart</i>	<i>Pagemart Offers Expanded Paging Capabilities</i>	<i>Sept. '97</i>	<i>5</i>
<i>Password</i>	<i>Hackers Sniff LANL Passwords</i>	<i>Oct. '97</i>	<i>6</i>
<i>Programming Environment Modules</i>	<i>Using Programming Environment Modules</i>	<i>Sept. '97</i>	<i>14</i>
<i>REDI</i>	<i>The REDI Project</i>	<i>Apr. '97</i>	<i>4</i>
<i>Research Library</i>	<i>Research Library's WWW Online Catalog</i>	<i>Mar. '97</i>	<i>4</i>
	<i>Accessing On-line Computing Literature via the Research Library</i>	<i>Aug. '97</i>	<i>6</i>
<i>RHO</i>	<i>Machine RHO Soon to Retire</i>	<i>Aug. '97</i>	<i>1</i>
	<i>Retirement of Machine RHO Postponed</i>	<i>Oct. '97</i>	<i>7</i>
<i>Screen Shots</i>	<i>Capture that Image: Screen Shots on Multiple Platforms</i>	<i>Aug. '97</i>	<i>11</i>
<i>SciSearch</i>	<i>New Weekly Alerting Service via SciSearch at LANL</i>	<i>Nov. '96</i>	<i>6</i>
<i>Telnet</i>	<i>Configuring Telnet as a Supporting Application under Netscape 3.X</i>	<i>Mar. '97</i>	<i>7</i>
<i>TIG (Terminal Internet Gateway)</i>	<i>Dial-Up TIG for the Administrative Network Now Available</i>	<i>May '97</i>	<i>9</i>
<i>Universal Serial Bus (USB)</i>	<i>The Universal Serial Bus Has Arrived</i>	<i>Apr. '97</i>	<i>6</i>
<i>VersaTerm-PRO</i>	<i>Configuring Your Macintosh Keyboard for VersaTerm-PRO</i>	<i>May '97</i>	<i>10</i>
<i>Video Teleconference Center</i>	<i>Video Teleconference Center Offers New Capabilities</i>	<i>Apr. '97</i>	<i>1</i>
	<i>Video Teleconference Center Offers New Capabilities [Update to previous article]</i>	<i>Oct. '97</i>	<i>2</i>
<i>Visualization Team</i>	<i>CIC-8 Visualization Team</i>	<i>Oct. '97</i>	<i>1</i>
<i>World Wide Web (WWW or Web)</i>	<i>Getting a Web Site Indexed</i>	<i>Nov. '96</i>	<i>10</i>
	<i>Tools for Developing Web Pages in the Windows Environment</i>	<i>Dec. '96</i>	<i>18</i>
	<i>Web Security in the Open Network Security Model</i>	<i>Apr. '97</i>	<i>7</i>
	<i>Using the Web to Track Funding Opportunities</i>	<i>June '97</i>	<i>3</i>
	<i>Web Cookies: Their Reason, Nature, and Security</i>	<i>June '97</i>	<i>6</i>
	<i>Active Content and Web Browser Security</i>	<i>Aug. '97</i>	<i>8</i>
	<i>Maintaining Effective Web Pages: More Tips and Tricks</i>	<i>Oct. '97</i>	<i>8</i>
<i>Windows 95</i>	<i>Keyboard Shortcuts for Windows 95</i>	<i>Dec. '96</i>	<i>22</i>
	<i>Windows 95 SLIP Support Installation</i>	<i>Feb. '97</i>	<i>13</i>

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